Class: 12   **LAB ACTIVITY – 7 (2020-21)**

Subject: Computers   TOPIC: **MySQL**

Create the tables given below. Fill values. **Underscore represents space.**

GAMES

GCode	GameName	Eventcount	PrizeMoney	Dt
101	Carom	2	5000	23-jan-2019
102	Badminton	2	10000	12-dec-2019
103	TableTennis	4	8000	14-feb-2019
104	Chess	2	9000	01-jan-2019
105	LawnTennis	4	25000	19-mar-2019
106	null	1	default	null
107	_ _ shooting_ _	2	10000	null

Add the following constraints:
a) primary key - Gcode
b) default – prizemoney to 10000
d) not null- prizemoney
e) check- number is positive
f) unique - gamename
DDL

CREATE TABLE GAMES(GCODE INT(3) NOT NULL PRIMARY KEY,

    -> GAMENAME VARCHAR(20) UNIQUE,

    -> EVENTCOUNT INTEGER(3) CHECK (EVENTCOUNT>0),

    -> PRIZEMONEY INT(8) NOT NULL DEFAULT 10000,

    -> DT DATE);

INSERT INTO GAMES VALUES(101,'CAROM',2,5000,'23-JAN-2019');

INSERT INTO GAMES(GCODE,EVENTCOUNT) VALUES(106,2);

Query OK, 1 row affected (0.40 sec)

SELECT * FROM GAMES;

+-------+-------------+------------+------------+------------+

| GCODE | GAMENAME | EVENTCOUNT | PRIZEMONEY | DT |

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```
+-------+-------------+-----------+-----------+------------+
|  101 | CAROM       |        2 |      5000 | 2019-01-23 |
|  102 | BADMINTON   |        2 |     10000 | 2019-12-12 |
|  103 | TABLETENNIS |        4 |      8000 | 2019-02-14 |
|  106 | NULL        |        2 |     10000 | NULL       |
+-------+-------------+-----------+-----------+------------+
4 rows in set (0.00 sec)
```

PLAYER

PCode	Name	GCode
1	Arjun	101
2	Ravi	105
3	Jignesh	101
4	Nihal	103
5	Sohail	104

Add the following constraints:
a) primary key - pcode
b) foreign key - gcode
c) index – name
d) not null -name

CREATE TABLE PLAYER
    -> (PCODE INT(3)NOT NULL PRIMARY KEY,
    -> NAME VARCHAR(20) NOT NULL,
    -> GCODE INT(3) REFERENCES GAME(GCODE));

Note:
1. **Column and table names cannot have symbols except underscore; names must start with an alphabet or underscore**
2. **Data is case sensitive, while commands and table names, column names are not.**

Build queries for the following:
A. Simple select, column alias, order by, distinct
1.   Display gamename and prize money from games, arranged in the following order of gamenames : Lawn tennis, Badminton, Table tennis, Chess, Carom Boar

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SELECT GAMENAME,PRIZEMONEY FROM GAMES WHERE GAMENAME ORDER BY PRIZEMONEY ('Lawn tennis', 'Badminton', 'Table tennis', 'Chess', 'Carom Board');

2.   Display pcode as player code and name as player name in descending order of gcode and ascending order of name within each gcode from player.

    SELECT GCODE, PCODE "PLAYER CODE",NAME "PLAYER NAME" FROM
    PLAYER ORDER BY GCODE DESC, NAME DESC;
    +-------+-------------+-------------+
    | GCODE | PLAYER CODE | PLAYER NAME |
    +-------+-------------+-------------+
    | 105 | 2 | RAVI |
    | 103 | 3 | JIGNESH |
    | 101 | 4 | SEETHA |
    | 101 | 1 | ARJUN |
    +-------+-------------+-------------+

WHERE, GROUP BY, HAVING , ORDER BY

3.   Display unique PrizeMoney from games arranged in ascending order.

SELECT DISTINCT PRIZEMONEY FROM GAMES ORDER BY PRIZEMONEY

B. single row functions
(i) String functions – char, concat, lower, upper, ltrim, trim, rtrim, instr, length, left, right, mid/substr
   1. Display the character/s corresponding to each value of PrizeMoney.
   2. Combine the values of Gamename and Dt, separated with a space.
   3. Display all player names in lower case.
   4. Display all game names in uppercase.
   5. Display game names after removing from spaces from the end of the string, beginning and both ends.
   6. Display player name and the position of 'a' in each player name.
   7. Display gamename and the total number of characters in each.
   8. Display player name and the first 4 letters of each player name.
   9. Display game name and last the three characters.
   10.   Display player name and characters from 3^{rd} position to 5^{th} position in each.

(ii)Numeric Functions – mod, pow, round, truncate, sqrt, **expressions**
   1.   Display prizemoney, 5% of prize money rounded to one decimal place.
   2.   Display prizemoney, 5% of prize money truncated to one decimal place.
   3.   Display the remaining amount of prizemoney / eventcount. (use mod)
   4.   Display square and square root of each pcode.

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(iii) date and time functions – curdate, , now, sysdate, date, month, year, dayname, dayofmonth, dayofweek, dayofyear
1. Display current date and time, current date only, date and time of execution.
2. Display only the date portion from date and time returned from sysdate function.
3. Display the following using games table.

Dt	Dayofmonth	month	year	Dayname	Dayofweek	dayofyear
23-jan-2019						
12-dec-2019						
14-feb-2019						
01-jan-2019						
19-mar-2019						

C. select with where clause (comparison :>, <, >= etc , between, in, like, is null, logical) , expressions
1. Display gcode, gamename and eventcount in the months: January and February or those with prizemoney below 15000.
2. Display gcode and player names with gcode: 101, 105
3. Display gamenames between the alphabet range: A and P
   SELECT * FROM GAME WHERE SUBSTRING([GAMENAME],1,1)>='A'
   AND SUBSTRING([GAMENAME],1,1)<='P';
4. Display gamenames who do not have a dt value.

D. Aggregate functions – count, max, min, sum ,avg, group by, having
1. Display the total number of gamenames from games.
2. Display the sum of eventcount from games.
3. Display the number of values/rows per date if the count is more than 1.
4. Display the highest ,lowest , total and average of prizemoney

E. Equi join
1. Display Gcode, gname and player name for matching values of gcode between the two tables.
2. Display pcode, player name, prizemoney for matching values of gcode between the two tables.

F. DDL commands – alter table, drop table, create table using existing table
1. Change the column name Dt to date_of_event , in games table.
2. Add a new column: email (stores characters) to the table player.
3. Increase the width of gamename column to 20, on games table.
4. Create a new table : games_copy using the structure of games table.

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G. DML commands– delete, update, insert into using existing table
1. Remove records without date value in games table.
2.   Replace records having gcode 104 with 105
3. Copy values of games table to games_copy created in the previous question.

H. Using all clauses : where, group by, having, order by

1.   Display game names beginning with B or C grouped under each date, in ascending order.

SELECT GAMENAME FROM GAMES WHERE GAMENAME LIKE 'B%' OR GAMENAME LIKE 'C%' GROUP BY DT ORDER BY DT;

2.   Display total number of games per prizemoney, with a count more than 1, for records with dt in the months January or December.

SELECT COUNT(*) FROM GAMES WHERE MONTH(DT)=01 OR MONTH(DT)=12 GROUP BY PRIZEMONEY HAVING COUNT(*)>1;